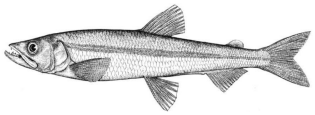
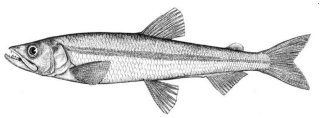
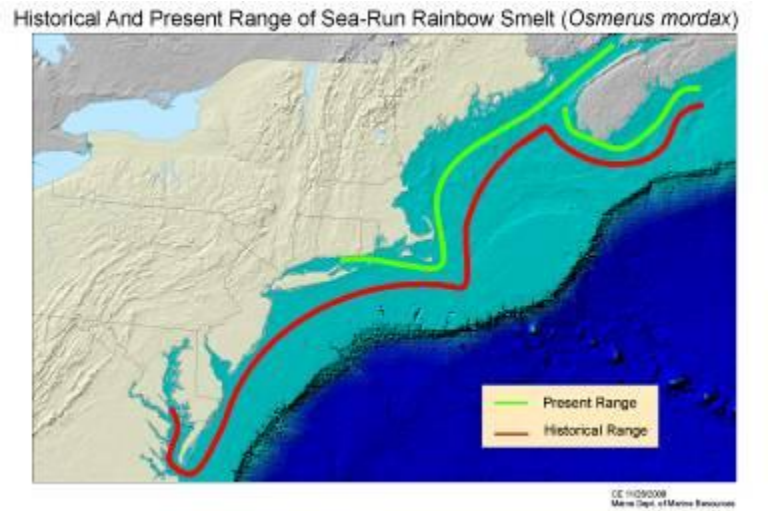


Rainbow Smelt Voluntary Winter Fishery Survey



Why are we studying smelt?

In Maine, ice fishing on frozen tidal rivers remains a popular recreational activity. We are collecting information about the number of rainbow smelt caught through the ice to understand more about movements of winter populations in tidal rivers and annual population cycles.



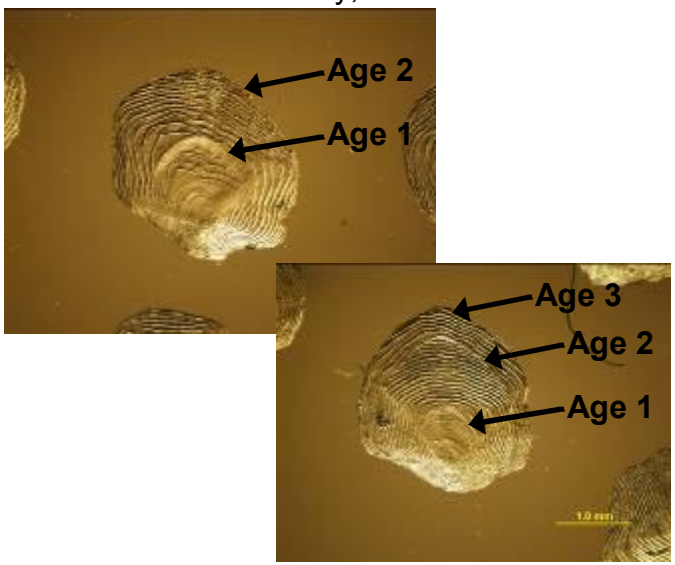
Rainbow smelt populations on the Atlantic Coast of the United States have been declining over the last century. Historically, rainbow smelt populations were found from Chesapeake Bay to Labrador but are now only found east of Long Island Sound. Populations in Long Island Sound and Narragansett Bay may be seriously impacted, perhaps to the point of being extirpated. We are collecting this information to assess the health and viability of Maine populations of smelt, and will compare the information to similar surveys conducted in New Hampshire. There is also a concern about the concentration of toxins in the rainbow smelt being taken for human consumption.

What are we doing?

At the beginning of the season, camp owners are contacted and asked for their voluntary participation in the survey. No camps are required to participate. Participating camps are given a supply of "Catch Cards" to give to customers, and a drop box for the customers to return the cards to at the end of their fishing trips. This information will be used to assess annual population trends for sea-run smelt using the Kennebec River and Merrymeeting Bay during the winter months.

FIG. 11.—Smelt house and fisherman, Damariscotta River, Me., winter of 1925-26. Fisherman holding up two smelts caught at the same time

DMR staff also visit participating camps to collect biological information. Staff measure smelt to the nearest millimeter, determine the sex, and take scale and fin clip samples. Biologists use the scale samples to determine the age of the fish, and extract DNA from the fin clips to compare to other smelt in the Gulf of Maine. We have found distinct genetic populations in different regions of the Gulf of Maine. Also, samples of whole smelts are collected to sample the amount of accumulated metals, like lead and mercury, in smelts.



This survey is a joint effort between the Maine Department of Marine Resources (DMR) Smelt Group, DMR Recreational Fisheries Group, the Maine Department of Environmental Protection, and the Maine Center of Disease Control.

2009 Results

In 2009, we placed catch card boxes at the camps and conducted interviews from early January through mid-March.

Catch Cards:

Your efforts produced 126 total completed cards in 2009, reporting 14,891 smelt being caught. This averaged to be 118 smelt caught by each group.

Interviews:

DMR staff interviewed 26 groups of anglers in 2009. We found that each group caught an average of 53 smelt.

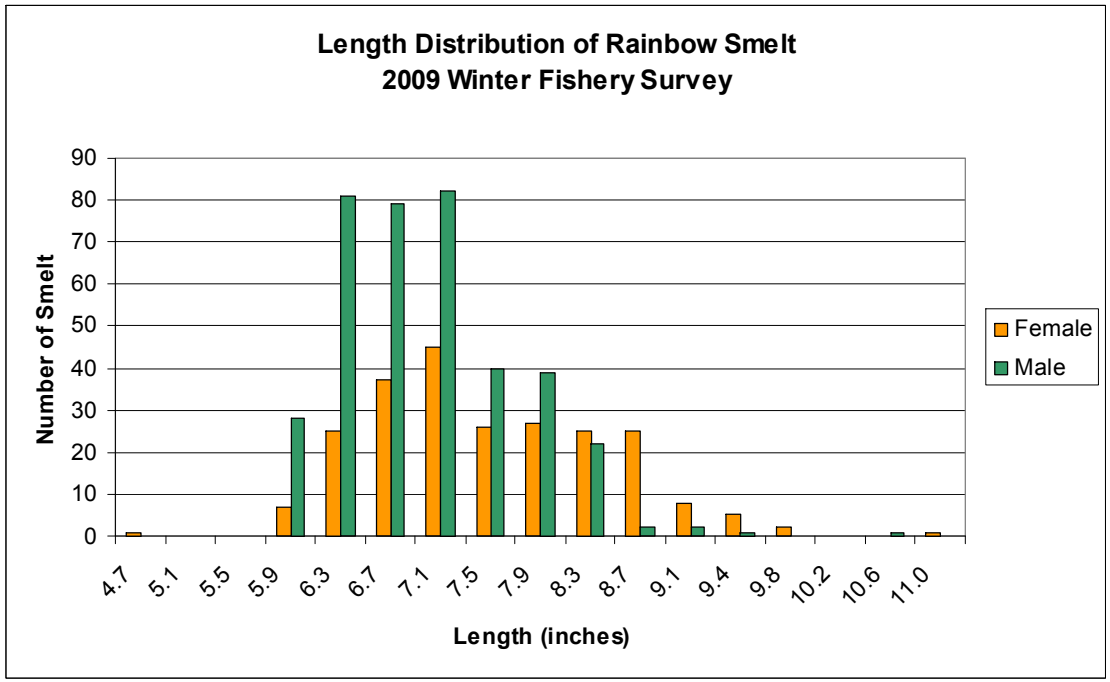


Table 1. Male and Female smelt average sizes and ratios.

Average Female Length (inches)	Average Male Length (inches)	Total Number Measured	Number of Males	Number of Female	Sex Ratio (Male to Female)
7.6	7.1	611	377	234	1.61